

**CORN and GRAIN SORGHUM BOARD  
PROGRESS SUMMARY NOV. 2008**

**Title:** Management of Grain Sorghum Diseases in Arkansas

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**Progress Summary:**

**To determine the impact of disease on sorghum yield and quality in different areas of the state.**

Fungicide trials were conducted in 8 counties in eastern Arkansas in cooperation with county agents, consultants and crop protection industry personnel. Results varied greatly between trials and demonstrations and further analysis and testing will be needed. Yield results ranged from zero to 23 Bu/A difference between treated and untreated sorghum strips.

**To gather preliminary information on the factors influencing charcoal rot of grain sorghum in Arkansas.**

Fields with lodging were assessed for causal agent and factors influencing charcoal rot. Most lodging observed appeared to be related to either charcoal rot, other stalk rotting fungi, or anthracnose. Tissue and soil analysis results were complex, although a trend for increased stalk rotting and lodging was observed when soil and tissue potassium levels were low and/or nitrogen tissue levels were high.

**To determine the benefit of seed and in-furrow treatments on sorghum stand and yield.**

Of seed treatment fungicides tested, Dynasty and Vortex showed the most stand protection but no clear effect on yield was noted. Seed treatment insecticides had no effect in these trials, however, additional tested should be conducted. In-furrow treatments were inconclusive and need to be repeated.

**To determine the benefit of foliar fungicides on sorghum yield and grain quality.**

We conducted six small plot replicated fungicide trials in four counties and two replicated large strip trials in two counties. Yield results varied greatly by location and level of disease. Timing of fungicide application suggested that 50% flowering was optimum but further timing studies will be needed. Strobilurin fungicides were highly effective in suppressing foliar disease late in the season, however effect on yield at most locations was minimal. Effect on mycotoxin level in grain is being assessed at this time.

**To establish a sorghum disease nursery under overhead irrigation and assess the reaction of sorghum hybrids to various diseases.**

Hybrids (30) were assessed under pivot irrigation at the Kibler and Newport experiment stations. Diseases were moderately severe at both sites and comparative ratings suggested the following high-yielding hybrids had better disease resistance than others rated: DEKALB DKS54-00; Terral TV 93572; DEKALB DKS54-03; DEKALB DKS44-20; DEKALB DKS53-67; Pioneer 83G66. The most susceptible varieties included Pioneer 84G62 and Asgrow A571, a couple of the most popular hybrids grown. In addition, we assessed disease reaction for the grain sorghum variety tests at the SEREC and NEREC during 2008. These data were reported to the variety testing program.

